

SOLAR/1040-79/03

Monthly Performance Report



SADDLE HILL TRUST

LOT 77

MARCH 1979



U.S. Department of Energy

National Solar Heating and
Cooling Demonstration Program

National Solar Data Program

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MONTHLY PERFORMANCE REPORT

SADDLE HILL TRUST
LOT 77

MARCH 1979

I. SYSTEM DESCRIPTION

Saddle Hill Trust Lot 77 is a single-family residence in Medway, Massachusetts. Solar energy is used for preheating incoming city water. The system has an array of flat-plate collectors with a gross area of 78 square feet. The array faces south at an angle of 38 degrees to the horizontal. Air is used as the medium for delivering solar energy from the collector array to an air-to-liquid heat exchanger located in the collector air duct. Water is the medium used to transport solar energy from the heat exchanger to storage. Solar energy is stored in the basement in a 120-gallon preheat storage tank. This preheated city water is supplied, on demand, to a conventional 40-gallon domestic-hot-water (DHW) tank. When solar energy is insufficient to satisfy the hot water requirements, the gas-driven DHW heater provides auxiliary energy for water heating. The system, shown schematically in Figure 1, has two modes of solar operation.

Mode 1 - Collector-to-Storage: This mode activates when the difference between the temperature of the collector air and the temperature of the water in the preheat tank exceeds 40°F and the temperature of the water in the tank is below 140°F. Both the fan and pump go on. This mode continues until the temperature difference drops to 20°F.

Mode 2 - Storage-to-Space Heating: This mode activates when there is a demand for hot water. Hot water from the top of the preheat tank is transferred to the DHW tank to replace water removed. Simultaneously, city water is automatically supplied to the preheat tank.

II. PERFORMANCE EVALUATION

INTRODUCTION

The site was occupied in March and the solar energy system operated continuously during the month. Solar energy satisfied 31 percent of the DHW requirements. The solar energy system provided a fossil fuel energy savings of 1.1 million Btu and incurred an electrical energy expense of 0.10 million Btu.

WEATHER CONDITIONS

During the month, total incident solar energy on the collector array was 2.8 million Btu for a daily average of 1161 Btu per square foot. This was below the estimated average daily solar radiation for this geographical area during March of 1239 Btu per square foot for a south-facing plane with a tilt

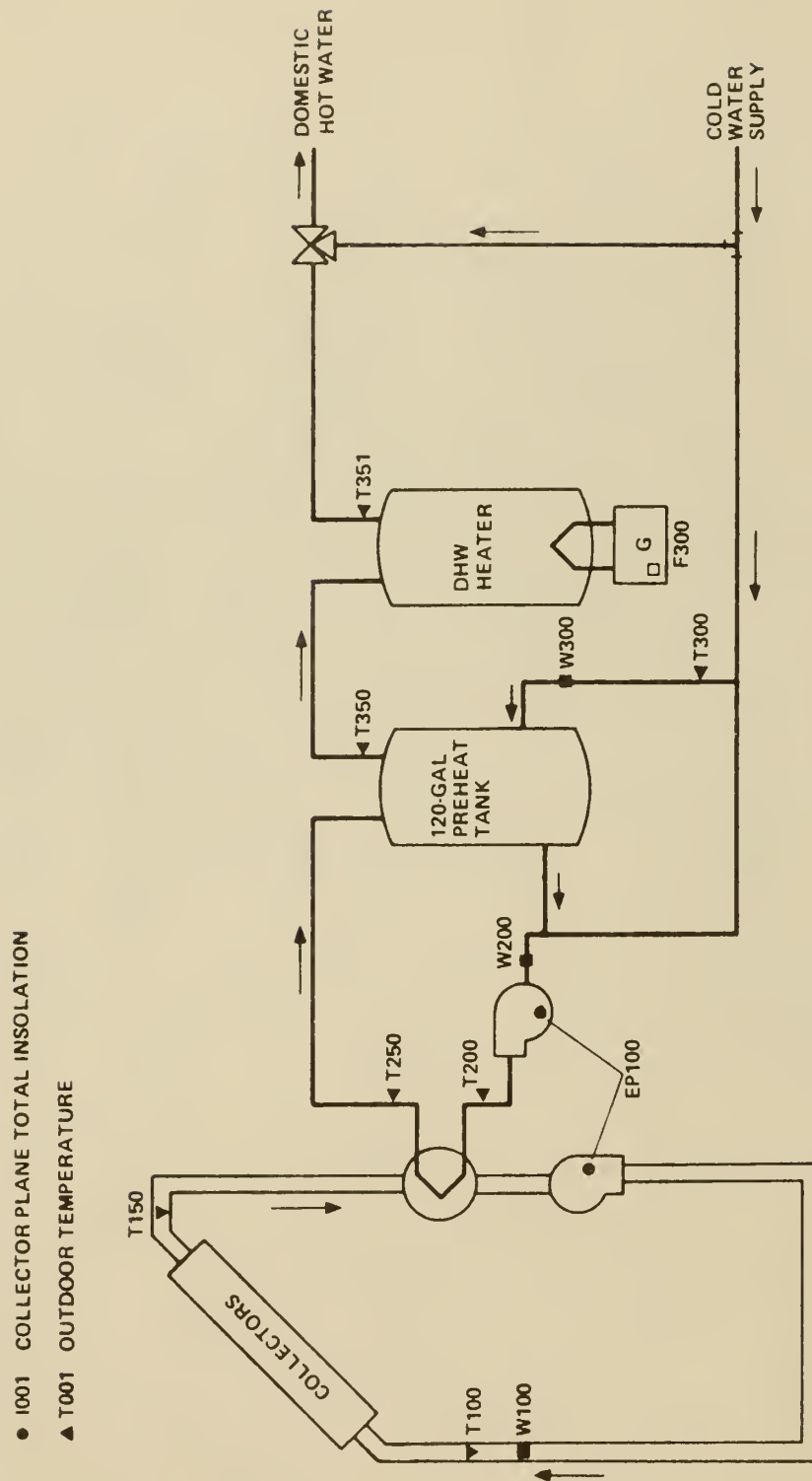


Figure 1. SADDLE HILL TRUST, LOT NO. 77, SOLAR ENERGY SYSTEM SCHEMATIC

of 38 degrees to the horizontal. The average ambient temperature during March was 41°F as compared with the long-term average for March of 38°F.

THERMAL PERFORMANCE

System - During March the solar energy system performed somewhat better than expected. The expected performance was determined from a modified f-chart analysis using measured weather and subsystem loads as inputs. Solar energy collected was 0.83 million Btu versus an estimated 0.69 million Btu. Solar energy used by the system was estimated by assuming that all energy collected would be applied to the load. Actual solar energy used was 0.70 million Btu. System total solar fraction was 31 percent versus an estimated 28 percent.

Collector - The total incident solar radiation on the collector array for the month of March was 2.8 million Btu. During the period the collector loop was operating the total insolation amounted to 2.3 million Btu. The total collected solar energy for the month of March was 0.83 million Btu, resulting in a collector array efficiency of 30 percent, based on total incident insolation. Operating energy required by the collector loop was 0.10 million Btu.

DHW Load - The DHW subsystem consumed 0.70 million Btu of solar energy and 3.0 million Btu of auxiliary fossil fuel energy to satisfy a hot water load of 2.2 million Btu. The solar fraction of this load was 31 percent. Losses from the DHW subsystem were 0.29 million Btu. A daily average of 88 gallons of DHW was consumed at an average temperature of 144°F delivered from the tank.

OBSERVATIONS

The 0.29 million Btu loss from the DHW subsystem was at least partially attributed to maintaining a relatively high average temperature of 144°F at the DHW outlet.

ENERGY SAVINGS

The solar energy system provided a fossil fuel energy savings of 1.1 million Btu, while incurring an electrical energy expense of 0.10 million Btu.

III. ACTION STATUS

No action is required at this time.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT SITE SUMMARY

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053 SOLAR/1039-75/03
REPORT PERIOD: MARCH, 1979

SITE/SYSTEM DESCRIPTION:

THE SADDLE HILL TRUST, LOT 77, SOLAR SYSTEM PROVIDES YEAR ROUND HOT WATER TO A SINGLE FAMILY DETACHED HOUSE. THE COLLECTOR IS A SOLARCN 2000 FOUR PANEL AIR COLLECTOR. STORAGE IS A 120 GALLON WATER TANK. AUXILIARY HOT WATER IS PROVIDED BY A GAS DOMESTIC HOT WATER HEATER.

GENERAL SITE DATA:

| | | |
|----------------------------------|-------|-------------|
| INCIDENT SOLAR ENERGY | 2.807 | MILLION BTU |
| COLLECTED SOLAR ENERGY | 35982 | BTU/SG.FT. |
| AVERAGE AMBIENT TEMPERATURE | 0.828 | MILLION BTU |
| AVERAGE BUILDING TEMPERATURE | 10613 | BTU/SG.FT. |
| ECSS SOLAR CONVERSION EFFICIENCY | 41 | DEGREES F |
| ECSS OPERATING ENERGY | N.A. | DEGREES F |
| TOTAL SYSTEM OPERATING ENERGY | C.25 | |
| TOTAL ENERGY CONSUMED | 0.101 | MILLION BTU |
| | 0.101 | MILLION BTU |
| | 3.933 | MILLION BTU |

SUBSYSTEM SUMMARY:

| | | | |
|---------------------|-----------|---------|---------|
| LCAD | HOT WATER | HEATING | COOLING |
| SOLAR FRACTION | 2.209 | N.A. | N.A. |
| SOLAR ENERGY USED | 31 | N.A. | N.A. |
| OPERATING ENERGY | 0.701 | N.A. | N.A. |
| AUX. THERMAL ENERGY | N.A. | N.A. | N.A. |
| AUX. ELECTRIC FUEL | 1.802 | N.A. | N.A. |
| AUX. FOSSIL FUEL | N.A. | N.A. | N.A. |
| ELECTRICAL SAVINGS | 3.004 | N.A. | N.A. |
| FOSSIL SAVINGS | -0.101 | N.A. | N.A. |
| | 1.105 | N.A. | N.A. |

SYSTEM PERFORMANCE FACTOR:

0.661

* DENOTES UNAVAILABLE DATA
@ DENOTES NULL DATA
N.A. DENOTES NOT APPLICABLE DATA

REFERENCE: USER'S GUIDE TO THE MONTHLY PERFORMANCE REPORT
OF THE NATIONAL SOLAR DATA PROGRAM, FEBRUARY 28, 1978,
SOLAR/0004-78/18

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT SITE SUMMARY

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053
REPORT PERIOD: MARCH, 1979
SOLAR/1039-79/03

SITE/SYSTEM DESCRIPTION:
THE SADDLE HILL TRUST, LOT 77, SOLAR SYSTEM PROVIDES YEAR ROUND HOT WATER TO A SINGLE FAMILY DETACHED HOUSE. THE COLLECTOR IS A SOLARON 2000 FOUR PANEL AIR COLLECTOR. STORAGE IS A 120 GALLON WATER TANK. AUXILIARY HOT WATER IS PROVIDED BY A GAS DOMESTIC HOT WATER HEATER.

GENERAL SITE DATA:

INCIDENT SOLAR ENERGY
COLLECTED SOLAR ENERGY
AVERAGE AMBIENT TEMPERATURE
AVERAGE BUILDING TEMPERATURE
ECSS SOLAR CONVERSION EFFICIENCY
ECSS OPERATING ENERGY
TOTAL SYSTEM OPERATING ENERGY
TOTAL ENERGY CONSUMED

2.061 GIGA JOULES
408616 KJ/SQ.M.
0.873 GIGA JOULES
120523 KJ/SQ.M.
N.A. DEGREES C
0.25 DEGREES C
0.107 GIGA JOULES
0.107 GIGA JOULES
4.149 GIGA JOULES

SUBSYSTEM SUMMARY:

LOAD
SOLAR FRACTION
SOLAR ENERGY USED
OPERATING ENERGY
AUX. THERMAL ENG
AUX. ELECTRIC FUEL
AUX. FOSSIL FUEL
ELECTRICAL SAVINGS
FOSSIL SAVINGS

HOT WATER
2.331
31
0.739
N.A.
1.902
N.A.
3.169
-0.107
1.166

HEATING
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.

COOLING
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.

SYSTEM TOTAL
2.331 GIGA JOULES
71 PERCENT
0.739 GIGA JOULES
0.107 GIGA JOULES
1.902 GIGA JOULES
N.A. GIGA JOULES
3.169 GIGA JOULES
-0.107 GIGA JOULES
1.166 GIGA JOULES

SYSTEM PERFORMANCE FACTOR:

0.661

- * DENOTES UNAVAILABLE DATA
- @ DENOTES NULL DATA
- N.A. DENOTES NOT APPLICABLE DATA

REFERENCE: USER'S GUIDE TO THE MONTHLY PERFORMANCE REPORT
OF THE NATIONAL SOLAR DATA PROGRAM, FEBRUARY 28, 1978.
SOLAR/0004-78/18

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT

ENERGY COLLECTION AND STORAGE SUBSYSTEM (ECSS)

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053.

REPORT PERIOD: MARCH, 1979

SCLAR/1039-79/03

| DAY OF MONTH | INCIDENT SOLAR ENERGY MILLION BTU | AMBIENT TEMP DEG-F | ENERGY TO LOADS MILLION BTU | AUX THERMAL TO FCSS MILLION BTU | FCSS OPERATING ENERGY MILLION BTU | ECSS ENERGY REJECTED MILLION BTU | ECSS SOLAR CONVERSION EFFICIENCY |
|--------------------|---|--------------------------|---|---|---|--|--|
| 1 | 0.089 | 38 | 0.023 | NOT | 0.004 | NOT | 0.252 |
| 2 | 0.014 | 37 | 0.000 | | 0.000 | | 0.000 |
| 3 | 0.055 | 39 | 0.009 | | 0.002 | | 0.172 |
| 4 | 0.042 | 40 | 0.005 | | 0.001 | | 0.112 |
| 5 | 0.067 | 55 | 0.024 | | 0.003 | | 0.366 |
| 6 | 0.010 | 51 | 0.000 | | 0.000 | | 0.000 |
| 7 | 0.007 | 45 | 0.000 | | 0.000 | | 0.000 |
| 8 | 0.030 | 43 | 0.004 | | 0.001 | | 0.127 |
| 9 | 0.126 | 42 | 0.046 | | 0.005 | | 0.369 |
| 10 | 0.013 | 40 | 0.000 | | 0.000 | | 0.000 |
| 11 | 0.020 | 37 | 0.000 | | 0.000 | | 0.000 |
| 12 | 0.117 | 26 | 0.028 | | 0.004 | | 0.236 |
| 13 | 0.115 | 32 | 0.028 | | 0.004 | | 0.242 |
| 14 | 0.030 | 49 | 0.004 | | 0.001 | | 0.147 |
| 15 | 0.170 | 25 | 0.039 | | 0.006 | | 0.231 |
| 16 | 0.148 | 24 | 0.034 | | 0.005 | | 0.232 |
| 17 | 0.175 | 32 | 0.042 | | 0.006 | | 0.242 |
| 18 | 0.117 | 32 | 0.023 | | 0.004 | | 0.154 |
| 19 | 0.081 | 41 | 0.021 | | 0.005 | | 0.263 |
| 20 | 0.165 | 44 | 0.050 | | 0.006 | | 0.304 |
| 21 | 0.104 | 49 | 0.031 | | 0.004 | | 0.303 |
| 22 | 0.179 | 51 | 0.056 | | 0.007 | | 0.314 |
| 23 | 0.171 | 53 | 0.045 | | 0.007 | | 0.265 |
| 24 | 0.113 | 52 | 0.023 | | 0.005 | | 0.204 |
| 25 | 0.014 | 52 | 0.000 | | 0.000 | | 0.000 |
| 26 | 0.167 | 44 | 0.056 | | 0.006 | | 0.325 |
| 27 | 0.187 | 34 | 0.045 | | 0.006 | | 0.242 |
| 28 | 0.188 | 37 | 0.045 | | 0.006 | | 0.241 |
| 29 | 0.033 | 43 | 0.004 | | 0.001 | | 0.109 |
| 30 | 0.018 | 47 | 0.000 | | 0.000 | | 0.000 |
| 31 | 0.043 | 48 | 0.013 | | 0.002 | | 0.309 |
| SUM | 2.807 | - | 0.701 | N.A. | 0.101 | N.A. | - |
| AVG | 0.091 | 41 | 0.023 | N.A. | 0.003 | N.A. | 0.250 |
| NRS ID | 0001 | N113 | | | Q102 | | N111 |

* DENOTES UNAVAILABLE DATA.

3 DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT COLLECTOR ARRAY PERFORMANCE

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053 SOLAR/1036-79/02
REPORT PERIOD: MARCH, 1979

| DAY OF MONTH | INCIDENT SOLAR ENERGY MILLION BTU | OPERATIONAL INCIDENT ENERGY MILLION BTU | COLLECTED SOLAR ENERGY MILLION BTU | DAYTIME AMPI TEMP DEG F | COLLECTOR ARRAY EFFICIENCY |
|--------------------|---|---|--|----------------------------------|----------------------------------|
| 1 | 0.089 | 0.075 | 0.027 | 54 | 0.306 |
| 2 | 0.014 | 0.000 | 0.000 | 40 | 0.000 |
| 3 | 0.055 | 0.032 | 0.012 | 48 | 0.221 |
| 4 | 0.042 | 0.017 | 0.006 | 43 | 0.151 |
| 5 | 0.067 | 0.056 | 0.028 | 62 | 0.414 |
| 6 | 0.010 | 0.000 | 0.000 | 52 | 0.000 |
| 7 | 0.007 | 0.000 | 0.000 | 44 | 0.000 |
| 8 | 0.030 | 0.007 | 0.004 | 46 | 0.141 |
| 9 | 0.126 | 0.119 | 0.053 | 51 | 0.420 |
| 10 | 0.013 | 0.000 | 0.000 | 44 | 0.000 |
| 11 | 0.020 | 0.000 | 0.000 | 39 | 0.000 |
| 12 | 0.117 | 0.090 | 0.032 | 31 | 0.271 |
| 13 | 0.115 | 0.091 | 0.033 | 37 | 0.285 |
| 14 | 0.030 | 0.005 | 0.004 | 55 | 0.152 |
| 15 | 0.170 | 0.156 | 0.047 | 27 | 0.275 |
| 16 | 0.149 | 0.133 | 0.041 | 28 | 0.278 |
| 17 | 0.175 | 0.163 | 0.052 | 44 | 0.297 |
| 18 | 0.117 | 0.100 | 0.029 | 40 | 0.244 |
| 19 | 0.081 | 0.072 | 0.025 | 48 | 0.312 |
| 20 | 0.165 | 0.155 | 0.057 | 50 | 0.348 |
| 21 | 0.104 | 0.094 | 0.037 | 60 | 0.361 |
| 22 | 0.179 | 0.166 | 0.064 | 72 | 0.361 |
| 23 | 0.171 | 0.159 | 0.054 | 72 | 0.315 |
| 24 | 0.113 | 0.101 | 0.029 | 63 | 0.256 |
| 25 | 0.014 | 0.000 | 0.000 | 54 | 0.000 |
| 26 | 0.167 | 0.153 | 0.064 | 51 | 0.384 |
| 27 | 0.187 | 0.172 | 0.054 | 39 | 0.288 |
| 28 | 0.188 | 0.176 | 0.054 | 45 | 0.287 |
| 29 | 0.033 | 0.012 | 0.005 | 45 | 0.147 |
| 30 | 0.018 | 0.000 | 0.000 | 51 | 0.000 |
| 31 | 0.043 | 0.028 | 0.016 | 50 | 0.368 |
| SUM | 2.807 | 2.335 | 0.828 | - | - |
| AVG | 0.091 | 0.075 | 0.027 | 49 | 0.295 |
| NBSIC | 0001 | | G100 | | N100 |

* DENOTES UNAVAILABLE DATA.

@ DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

SOLAP HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT STORAGE PERFORMANCE

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY.MA 02053SOLAP/1039-79/02
REPORT PERIOD: MARCH,1979

| DAY OF MONTH | ENERGY TO STORAGE MILLION BTU | ENERGY FROM STORAGE MILLION BTU | CHANGE IN STORED ENERGY MILLION BTU | STORAGE AVERAGE TEMP DEG F | STORAGE EFFICIENCY |
|--------------------|---|---|---|-------------------------------------|-----------------------|
| 1 | NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
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| 24 | | | | | |
| 25 | | | | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| SUM | N.A. | N.A. | N.A. | - | - |
| AVG | N.A. | N.A. | N.A. | N.A. | N.A. |
| NBS ID | Q200 | Q201 | G202 | | N108 |

* DENOTES UNAVAILABLE DATA.
 @ DENOTES NULL DATA.
 N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT
HOT WATER SUPSYSTEM

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053
REPORT PERIOD: MARCH, 1979

SOLAR/1039-75/03

| DAY OF MON. | HOT WATER LOAD MILLION BTU | SOLAR FR. OF LOAD CENT | SOLAR ENERGY USED MILLION BTU | OPER ENERGY MILLION BTU | ALX THERMAL USED MILLION BTU | AUX FLFCT FUEL MILLION BTU | AUX FOSSIL FUEL MILLION BTU | ELFCT ENERGY SAVINGS MILLION BTU | FOSSIL ENERGY SAVINGS MILLION BTU | SUP. WAT. TEMP DEG F | HCT WAT. TEMP DEG F | HOT WATER USED GAL |
|-------------------|--|---------------------------------|---|----------------------------------|--|--|---|--|---|----------------------------------|---------------------------------|-----------------------------|
| 1 | 0.034 | 43 | 0.023 | NOT | 0.036 | | 0.061 | -0.004 | 0.022 | 44 | 147 | 39 |
| 2 | 0.000 | | 0.000 | NOT | 0.017 | | 0.028 | -0.000 | 0.000 | 39 | 151 | 0 |
| 3 | 0.000 | 0 | 0.009 | | 0.017 | | 0.029 | -0.002 | 0.000 | 39 | 151 | 0 |
| 4 | 0.036 | 22 | 0.005 | | 0.041 | | 0.068 | -0.001 | 0.020 | 39 | 150 | 40 |
| 5 | 0.142 | 30 | 0.024 | | 0.096 | | 0.161 | -0.003 | 0.060 | 40 | 149 | 165 |
| 6 | 0.066 | 15 | 0.000 | | 0.072 | | 0.121 | 0.000 | 0.016 | 45 | 146 | 74 |
| 7 | 0.061 | 9 | 0.000 | | 0.068 | | 0.114 | 0.000 | 0.008 | 44 | 148 | 69 |
| 8 | 0.174 | 11 | 0.004 | | 0.107 | | 0.178 | -0.001 | 0.019 | 43 | 141 | 208 |
| 9 | 0.063 | 18 | 0.046 | | 0.069 | | 0.115 | -0.005 | 0.015 | 44 | 144 | 81 |
| 10 | 0.053 | 29 | 0.000 | | 0.051 | | 0.085 | 0.000 | 0.029 | 44 | 141 | 58 |
| 11 | 0.071 | 25 | 0.000 | | 0.077 | | 0.129 | 0.000 | 0.023 | 43 | 142 | 79 |
| 12 | 0.051 | 13 | 0.028 | | 0.056 | | 0.093 | -0.004 | 0.014 | 43 | 145 | 58 |
| 13 | 0.139 | 32 | 0.028 | | 0.093 | | 0.155 | -0.001 | 0.074 | 45 | 143 | 147 |
| 14 | 0.038 | 19 | 0.004 | | 0.048 | | 0.080 | -0.001 | 0.011 | 44 | 140 | 41 |
| 15 | 0.036 | 28 | 0.039 | | 0.036 | | 0.060 | -0.006 | 0.024 | 45 | 140 | 41 |
| 16 | 0.032 | 32 | 0.034 | | 0.047 | | 0.078 | -0.005 | 0.019 | 44 | 144 | 59 |
| 17 | 0.065 | 45 | 0.042 | | 0.049 | | 0.082 | -0.006 | 0.048 | 45 | 142 | 82 |
| 18 | 0.052 | 46 | 0.023 | | 0.050 | | 0.083 | -0.004 | 0.041 | 42 | 140 | 66 |
| 19 | 0.183 | 51 | 0.021 | | 0.092 | | 0.153 | -0.005 | 0.121 | 41 | 144 | 214 |
| 20 | 0.068 | 38 | 0.050 | | 0.056 | | 0.093 | -0.006 | 0.042 | 43 | 146 | 82 |
| 21 | 0.057 | 33 | 0.031 | | 0.056 | | 0.093 | -0.004 | 0.037 | 46 | 145 | 72 |
| 22 | 0.063 | 38 | 0.056 | | 0.051 | | 0.086 | -0.007 | 0.047 | 43 | 140 | 147 |
| 23 | 0.046 | 47 | 0.045 | | 0.029 | | 0.049 | -0.005 | 0.046 | 47 | 139 | 58 |
| 24 | 0.058 | 45 | 0.023 | | 0.041 | | 0.069 | -0.005 | 0.052 | 47 | 141 | 68 |
| 25 | 0.049 | 43 | 0.000 | | 0.048 | | 0.080 | -0.000 | 0.032 | 44 | 147 | 58 |
| 26 | 0.136 | 31 | 0.056 | | 0.101 | | 0.168 | -0.006 | 0.066 | 43 | 143 | 169 |
| 27 | 0.084 | 32 | 0.045 | | 0.059 | | 0.095 | -0.006 | 0.045 | 43 | 145 | 121 |
| 28 | 0.057 | 34 | 0.045 | | 0.053 | | 0.088 | -0.006 | 0.041 | 49 | 140 | 79 |
| 29 | 0.072 | 51 | 0.004 | | 0.044 | | 0.073 | -0.001 | 0.054 | 48 | 141 | 90 |
| 30 | 0.151 | 36 | 0.000 | | 0.077 | | 0.128 | 0.000 | 0.054 | 45 | 146 | 171 |
| 31 | 0.074 | 21 | 0.013 | | 0.065 | | 0.108 | -0.002 | 0.024 | 46 | 144 | 87 |
| SUM | 2.209 | - | 0.701 | N.A. | 1.802 | N.A. | 3.004 | -0.101 | 1.105 | - | - | 2724 |
| AVG | 0.071 | 31 | 0.023 | N.A. | 0.058 | N.A. | 0.097 | -0.003 | 0.036 | 44 | 144 | 88 |
| NPS | 7302 | N300 | 0300 | 0303 | 0301 | 0305 | 0306 | 0311 | 0313 | N305 | N307 | N308 |

* DENOTES UNAVAILABLE DATA.
DENOTES NULL DATA.
N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT ENVIRONMENTAL SUMMARY

SITE: SADDLE HILLS TRUST LOT #77, MEDWAY, MA 02053
 REPORT PERIOD: MARCH, 1979
 SCLAF/1039-79/03

| DAY OF MONTH | TOTAL INSOLATION BTU/SQ.FT | DIFFUSE INSOLATION BTU/SQ.FT | AMBIENT TEMPERATURE DEG F | DAYTIME AMBIENT TEMP DEG F | RELATIVE HUMIDITY PERCENT | WIND DIRECTION DEGREES | WIND SPEED M.P.H. |
|--------------------|----------------------------------|------------------------------------|---------------------------------|-------------------------------------|---------------------------------|------------------------------|-------------------------|
| 1 | 1147 | NOT | 38 | 54 | NOT | NOT | NOT |
| 2 | 183 | | 37 | 40 | | | |
| 3 | 704 | APPLICABLE | 39 | 48 | APPLICABLE | APPLICABLE | APPLICABLE |
| 4 | 540 | | 40 | 43 | | | |
| 5 | 857 | | 55 | 62 | | | |
| 6 | 134 | | 51 | 52 | | | |
| 7 | 86 | | 45 | 44 | | | |
| 8 | 385 | | 43 | 46 | | | |
| 9 | 1611 | | 42 | 51 | | | |
| 10 | 162 | | 40 | 44 | | | |
| 11 | 258 | | 37 | 39 | | | |
| 12 | 1494 | | 26 | 31 | | | |
| 13 | 1478 | | 32 | 37 | | | |
| 14 | 379 | | 49 | 55 | | | |
| 15 | 2186 | | 25 | 27 | | | |
| 16 | 1896 | | 24 | 28 | | | |
| 17 | 2247 | | 32 | 44 | | | |
| 18 | 1498 | | 32 | 40 | | | |
| 19 | 1042 | | 41 | 48 | | | |
| 20 | 2112 | | 44 | 50 | | | |
| 21 | 1331 | | 49 | 60 | | | |
| 22 | 2290 | | 51 | 72 | | | |
| 23 | 2192 | | 53 | 72 | | | |
| 24 | 1448 | | 52 | 63 | | | |
| 25 | 176 | | 52 | 54 | | | |
| 26 | 2135 | | 44 | 51 | | | |
| 27 | 2393 | | 34 | 39 | | | |
| 28 | 2409 | | 37 | 45 | | | |
| 29 | 427 | | 43 | 45 | | | |
| 30 | 230 | | 47 | 51 | | | |
| 31 | 554 | | 48 | 50 | | | |
| SUM | 35982 | N.A. | - | - | - | - | - |
| AVG | 1161 | N.A. | 41 | 48 | N.A. | N.A. | N.A. |
| NBS ID | Q001 | | N113 | | | N115 | N114 |

* DENOTES UNAVAILABLE DATA.

@ DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

UNIVERSITY OF FLORIDA



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